

Item 1 of Office Action

Applicant acknowledges the Examiner's comments at item 1 of the Action that the present application is eligible for continued examination and that the fee has been timely paid, and that the amendments made on March 28 have been entered. The amendments are in compliance with § 112. The Action erroneously refers to the amendments as being filed on April 11, 2002.

Item 2 of Office Action - Information Disclosure Statement

Applicant acknowledges the Examiner's comments that the Information Disclosure Statement submitted by Applicant has been considered. Applicant encloses herewith a copy of a further Information Disclosure Statement. The references and IDS were submitted on October 15, 2002.

Items 3 - 8 of Office Action, Objection to Claims and Rejection of Claim 11 Under §112

The Action objects to claim 13 for its use of the phrase "wherein said projection." Applicant has amended the phrase in claim 13 to read "wherein each of said of projections." The objection to claim 13 should be withdrawn.

Applicant has amended claim 12 to replace the word "slected" with "selected." The replacement merely corrects a scrivener's error.

The action objects to claim 11 under §112 as a result of the claim 11's usage of the phrase "plurality of adjacent splines." Applicant has amended claim 11 to recite "a plurality of said adjacent projections." The rejection to the claims under 35 U.S.C. §112 should be withdrawn.

Items 9, 10 of Office Action, Claim Rejections, 35 U.S.C. §102

The Action rejects claims 11-13 under 35 U.S.C. 102(b). The Action asserts the Japanese reference, Ikeda, discloses all elements recited in the claims. Applicant has amended claim 11 to include a recitation which clearly distinguishes it from Ikeda and combinations of prior art cited

references. The additional limitation states:

"wherein at least one of said projections are free of any protuberances substantially restricting an opening into any of said open areas."

Applicant has also added new claim 14. New claim 14 includes all of the limitations of original claim 11. New claim 14 also includes the following recitation which distinguishes it from Ikeda and combinations with prior art cited references.

"wherein each open area has a volume equal to or greater than a volume of at least one projection adjacent to each open area."

The above recited limitations distinguish an important feature of Applicant's separator from the separator disclosed in Ikeda and the other cited references. The limitations distinguish that Applicant's support has and preserves a great deal of air around each twisted pair in the open areas. The preservation of air arises from the use of projections which have minimal volume compared to the open area which the projections define. The additional air ensures that cables with Applicant's construction will have a better attenuation than cables utilizing the construction shown in Ikeda.

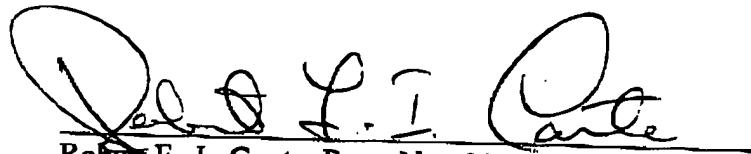
Ikeda clearly does not recognize the importance of maintaining a large air volume around the twisted pairs. Ikeda's figures and descriptions make it clear Ikeda desires to simply enclose each twisted pair in a circular envelope. See Ikeda, page 2, par. 2,3. The envelope has a metalized interior. Ikeda, page 3, line 1. Ikeda suggests utilizing a spline to substitute the same shape formed by using an individual shield around each twisted pair. Ikeda, figure 2. In fact, Ikeda expressly states that the channel which houses the twisted pair can be squeezed closed. See Ikeda, par. 3. None of the prior art references understand the importance of maintaining a large volume of air around the twisted pairs and limiting the amount of material contacting the twisted pairs. Applicant's

limitations clearly distinguish over Ikeda.

The limitations are not obvious in view of the cited references. In order for a combination of the art to make Applicant's claims obvious, the art itself must suggest the combination. See In re Newell, 891 F.2d 899 (Fed. Cir. 1989); Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931 (Fed. Cir. 1990). Further, in combining the art, one may not utilize bits and pieces of prior art apart from their teachings. See Bausch & Lomb, Inc. v. Barnes-Hind Hydrocurve, Inc., 796 F.2d 443 (Fed. Cir. 1986), cert. denied, 484 U.S. 823 (1987); Interconnect Planning Corp. v. Feil, 774 F.2d 1132 (Fed. Cir. 1985). Rather, in combining the art, the teachings of the art as a whole must be followed. Id. Any modifications necessary to the prior art to produce the claimed invention must be suggested by the prior art. See In re Gordon, 733 F.2d, 900 (Fed. Cir. 1984); In re Fritch, 972 F.2d 1260 (Fed. Cir. 1989). The above rules and principals were recently re-annunciated with emphasis In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999). The Federal Circuit, in Dembiczak, specifically indicated that combining prior art without specific teaching to make the combination and the modification impermissibly takes the inventor's disclosure as a blueprint. Id. The invention must not be viewed with the blueprint drawn by the inventor. Id. Clearly, none of the prior art references disclose the combination of preserving air volume around twisted pairs with use of a cable separator while at the same time controlling cross talk.

Conclusion

All of the pending claims presently stand in allowable condition. A Notice of Allowance should now issue.



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VERSION WITH MARKINGS

1. A data cable having a plurality of insulated signal transmission conductors, and an interior support, said interior support comprising:
 - a cylindrical longitudinally extending central portion;
 - a plurality of splines radially extending from said central portion along [the] a length of said central portion, said splines having a triangular cross-section with the base of the triangle forming part of the central portion, each of said triangular splines having the same radius;
 - each spline of said plurality of splines being adjacent to two other splines of said plurality;
 - a shield having a lateral fold, said shield supported by said triangular splines, said shield and splines defining a plurality of at least four conductor compartments;
 - a signal transmission conductor from said plurality of signal transmission conductors disposed in each of said compartments.
11. (Once amended) A data cable having a plurality of twisted pair conductors and an interior support comprising:
 - a longitudinally extending central portion forming a portion of said support;
 - a plurality of projections extending from said central portion;
 - each projection of said plurality of projections being adjacent to two other projections of said plurality of projections, said plurality of projections forming a plurality of adjacent projections;

a different [passage] open area defined by each of said plurality of adjacent projections;

only one twisted pair conductor from said plurality of twisted pair conductors disposed in each different [passage] open area defined by each of said plurality of adjacent [splines] projections, wherein at least one of said projections are free of protuberances substantially restricting an opening into any of said open areas; each twisted pair conductor having a first insulated electrical conductor and a second insulated electrical conductor, said first and second insulated conductors twisted about each other to form a twisted pair.

12. (Once amended) The cable of claim 11 wherein each of said [passage] open areas is [a passage] an open area [slected] selected from a group consisting of a channel, a groove, [and] a duct and a passage.
13. (Once amended) The cable of claim 11 wherein each of said projections is a projection selected from a group consisting of a prong, a spline, and an arm.
14. A data cable having a plurality of twisted pair conductors and an interior support comprising:
a longitudinally extending central portion forming a portion of said support;
a plurality of projections extending from said central portion;
each projection of said plurality of projections being adjacent to two other projections of said plurality of projections, said plurality of projections forming a plurality of adjacent projections;
a different open area defined by each of said plurality of adjacent projections;

only one twisted pair conductor from said plurality of twisted pair conductors disposed in each different open area defined by each of said plurality of adjacent projections, wherein each open area has a volume equal to or greater than a volume of at least one projection adjacent to each open area; each twisted pair conductor having a first insulated electrical conductor and a second insulated electrical conductor, said first and second insulated conductors twisted about each other to form a twisted pair. ---

- 15. The cable of claim 1 wherein the interior support has a helical twist. ---
- 16. The cable of claim 14 wherein each of said projections is a projection selected from a group consisting of a prong, a spline, and an arm. ---
- 17. The cable of claim 14 wherein said open area is an open area selected from a group consisting of a channel, a groove, a duct, and a passage. ---